

Name: _____

Date: _____

A2 CC Review Sheet for Exam 3 Quarter 1

Please answer all questions and show all work on a separate sheet of lined paper. This sheet must be completed by Friday, 10/27. Exam 3 is Monday, 10/30. This review sheet is **not** comprehensive. In order to fully prepare for this exam you need to go over your notes, homework assignment, OLD EXAMS.

In 1 - 7, perform the indicated operations and express answers in simplest form.

1. $\frac{x^2 - 3x}{2x^2 + x - 6} \div \frac{x^2 - 5x + 6}{x^2 - 4}$

2. $\frac{x^2 - 9}{x^2 - 5x} \cdot \frac{5x - x^2}{x^2 - x - 12} \div \frac{x - 4}{x^2 - 8x + 16}$

3. $\frac{3y^2 + 11y + 10}{5y^2 + 11y + 2} \div \frac{3y^2 - y - 10}{1 - 25y^2}$

In 4 - 10, factor each completely.

4. $3x^2 - 12$

8. $5a^2 + 14a - 3$

5. $81y^4 - 16$

9. $a^3 - 2a^2 + a - 2$

6. $x^3 - x^2 - 6x$

10. $x^2 + ax + bx + ab$

7. $4x^2 - 6x - 4$

11. Find the sum of $x\sqrt{3}$ and $\sqrt{75x^2}$

12. Simplify: $5\sqrt{-27} - \sqrt{-108} - 3\sqrt{-75}$

13. Simplify: $\frac{5x^2 - 15x}{27x - 3x^3}$

14. Write the value(s) of the variable, if any, for which the fraction is not defined:

(a) $\frac{5}{3-x}$

(b) $\frac{10}{x^2 - 25}$

(c) $\frac{x^2 - 49}{2x^2 - 3x}$

(d) $\frac{x^2 - x - 2}{x^3 + x^2 - 2x}$

15. Solve: $x - \sqrt{9 - 2x} = 3$

16. $\sqrt{2x+1} - 1 = 4$

17. Express in simplest form: $-3i^{50} + 5i^{51}$

18. Express the product in $a + bi$ form: $(4y - 5i)(2y + i)$

19. Solve for x : $2^{x+1} = 16$

20. Solve for x : $\left(\frac{1}{3}\right)^{x+1} = 27$

21. Solve for x : $2x^{\frac{2}{3}} + 4 = 22$

22. Solve for x : $2\sqrt{2x+3} + x = 1$

23. Solve for x : $\sqrt{x-1} + x = 7$

For 34-36, simplify the expression and eliminate any negative exponents.

24. $(6x^6y^2)^2 \left(\frac{x^5y^2}{2} \right)$

25. $(r^2s)^3(3s)^{-2}(9r)^2$

26. $\frac{a^4b^{-2}c}{a^{-5}b^5}$

For 37-39, rewrite each expression in radical form. (Assume all variables are positive.)

27. $4a^{\frac{2}{3}}$

28. $x^{\frac{-3}{4}}$

29. $(5y)^{\frac{3}{8}}$

30. Simplify: $\sqrt[3]{32x^7y^9z^2}$

31. Simplify: $\frac{6\sqrt{8x^3} - 9\sqrt{10x^5}}{3\sqrt{2x}}$